I claim:

1. A method of organizing a multiplicity of rules used to change selected subject matter from a first state to a preferred state comprising the steps of:

arranging said multiplicity of rules according to a hierarchy of rules;

associating said multiplicity of rules with a plurality of nodes, and associating selected ones of said plurality of nodes with another plurality of nodes, such that said plurality of nodes and said another plurality of nodes are indicative of levels of said hierarchy of rules; and

defining unique identifiers for each of said plurality of nodes and said another plurality of nodes, said unique identifiers corresponding to individual rules and sets of related rules of said multiplicity of rules for changing said subject matter from said first state to said preferred state.

2. The method of claim 1 wherein said step of associating further comprises the step of precluding inclusion of rules in a set of rules that could result in infinite looping or infinite recursion.

3. The method of claim 2 wherein said unique identifiers for a plurality of nodes are selected so as to avoid designating contradictory rules that could result in infinite looping or infinite recursion.

4. The method of claim 1 wherein said steps of arranging, associating and defining further comprises avoiding duplication of rules, sets of rules and node identifiers that are members of more than one set of rules.

5. The method of claim 4 wherein said steps of arranging, associating, defining and avoiding comprises the step of organizing said rules in a directed acyclic format or graph (DAG) data structure.

6. The method of claim 1 wherein said subject matter is selected from one of the group comprising mathematics, education, algebra, calculus and differential equations.

7. The method of claim 5 wherein said subject matter is selected from one of the group comprising mathematics, education, algebra, calculus and differential equations.

8. The method of claim 1 wherein said method of organizing is implemented on a computer device selected from the group comprising a computer, a hand-held calculator and a hand-held computing device.

9. The method of claim 3 wherein said method of organizing is implemented on a computer device selected from the group comprising a computer, a hand-held calculator and a hand-held computing device.

10. The method of claim 4 wherein said method of organizing is implemented on a computer device selected from the group comprising a computer, a hand-held calculator and a hand-held computing device.

11. The method of claim 5 wherein said method of organizing is implemented on a computer device selected from the group comprising a computer, a hand-held calculator and a hand-held computing device.

12. A method of organizing a multiplicity of rules used to change selected subject matter from a first state to a preferred state comprising the steps of:

arranging said multiplicity of rules according to a hierarchy of rules;

indicating that certain rules of said hierarchy are members of one or more sets with certain of these sets being members of other sets; and

indicating which of these rules and sets can be selected.

13. The method of claim 12 wherein said steps of arranging and indicating which rules can be selected precludes the selection of a set of rules that could result in infinite looping or infinite recursion.

14. A method for changing the state of selected subject matter from a first state to a preferred state comprising the steps of:

defining a multiplicity of rules for changing said subject matter from one state to another;

organizing said multiplicity of rules comprising the steps of:

arranging said multiplicity of rules according to a hierarchy or rules,

associating said multiplicity of rules with a plurality of nodes, and associating selected ones of said plurality of nodes with another plurality of nodes, such that said plurality of nodes and said another plurality of nodes are indicative of levels of said hierarchy of rules, and

defining unique identifiers for each of said nodes of said plurality of nodes and said another plurality of nodes, said unique identifiers corresponding to individual rules or sets of related rules of said multiplicity of rules for changing said subject matter from said first state to said preferred state;

selecting a node from one of said plurality of nodes and said another plurality of nodes for selectively changing said subject matter from said first state to said preferred state;

applying one of said rules associated with said selected node to change said subject matter from said one state to said preferred state.

15. The method of claim 14 wherein said unique identifiers for said plurality of nodes are selected so as to avoid designating contradictory rules that could result in infinite looping or infinite recursion.

16. The method of claim 14 wherein said steps of arranging, associating and defining further comprises avoiding duplication of rules, sets of rules and node identifiers that are members of more than one set of rules.

17. The method of claim 14 wherein said steps of arranging, associating, defining and avoiding comprises the step of organizing said rules in a directed acyclic format or graph (DAG) data structure.

18. The method of claim 14 further comprising the step of generating an array or linked list of pointers to ones of said plurality of nodes and said another plurality of nodes applicable to a particular problem state.

19. The method of claim 18 further comprising generating a pointer to at least one of said pointers of said array of pointers.

20. The method of claim 14 further comprising determining a group of nodes applicable to said subject matter and generating an array or linked list of said nodes applicable to said subject matter covering all rules directly or indirectly associated with a selected node, said array including the maximum number of rules associated with a single node while avoiding inclusion of rules that would result in infinite looping or infinite recursion.

21. The method of claim 16 further comprising determining a group of nodes applicable to said subject matter and generating an array or linked list of said nodes applicable to said subject matter covering all rules directly or indirectly associated with a selected node, said array including the maximum number of rules associated with a single node while avoiding inclusion of rules that would result in infinite looping or infinite recursion.

22. The method of claim 17 further comprising determining a group of nodes applicable to said subject matter and generating an array or linked list of said nodes applicable to said subject matter covering all rules directly or indirectly associated with a selected node, said array including the maximum number of rules associated with a single node while avoiding inclusion of rules that would result in infinite looping or infinite recursion.

23. The method of claim 20 further comprising the steps of:

selecting a top level node of said another plurality of nodes as a starting node;

determining the depth of each node of said plurality of nodes and said another plurality of nodes from said starting node to the lowest level nodes;

providing an indication of the depth of nodes included in said generated array; and

pruning rules from a node having the lowest depth level.

24. The method of claim 21 further comprising the steps of:

selecting a top level node of said another plurality of nodes as a starting node;

determining the depth of each node of said plurality of nodes and said another plurality of nodes from said starting node to the lowest level nodes;

providing an indication of the depth of nodes included in said generated array; and

pruning rules from a node having the lowest depth level.

25. The method of claim 22 further comprising the steps of:

selecting a top level node of said another plurality of nodes as a starting node;

determining the depth of each node of said plurality of nodes and said another plurality of nodes from said starting node to the lowest level nodes;

providing an indication of the depth of nodes included in said generated array; and

pruning rules from a node having the lowest depth level.

26. The method of claim 20 further comprising the steps of:

introducing subject matter suitable for changing from one state to a preferred state;

generating a group or bucket of nodes from said array or linked list of nodes having a node with the highest common depth level to increase the speed of changing complex introduced subject matter.

27. The method of claim 23 further comprising the steps of:

introducing subject matter suitable for changing from one state to a preferred state;

generating a group or bucket of nodes from said array or linked list of nodes having a node with the highest common depth level to increase the speed of changing complex introduced subject matter.

28. The method of claim 14 and further comprising introducing subject matter suitable from changing from one state to a preferred state, and repeating said applying step with other rules associated with said selected node until said subject matter has been changed to said preferred state.

29. The method of claim 26 further comprising repeating said applying step with other rules associated with said selected node until said subject matter has been changed to said preferred state.

30. The method of claim 29 further comprising the steps of:

avoiding revisiting fully changed portions of said introduced subject matter; and

following said selecting step by applying a different set of rules.

31. The method of claim 14 wherein said method for changing the state of selected subject matter is implemented on a computing device selected from the group comprising a computer, a hand-held calculator and a hand-held computing device.

32. The method of claim 14 wherein said method for changing the state of selected subject matter is implemented on a computing device selected from the group comprising a computer, a hand-held calculator and a hand-held computing device.

33. The method of claim 18 wherein said method for changing the state of selected subject matter is implemented on a computing device selected from the group comprising a computer, a hand-held calculator and a hand-held computing device.

34. The method of claim 20 wherein said method for changing the state of selected subject matter is implemented on a computing device selected from the group comprising a computer, a hand-held calculator and a hand-held computing device.

35. The method of claim 23 wherein said method for changing the state of selected subject matter is implemented on a computing device selected from the group comprising a computer, a hand-held calculator and a hand-held computing device.

36. The method of claim 26 wherein said method for changing the state of selected subject matter is implemented on a computing device selected from the group comprising a computer, a hand-held calculator and a hand-held computing device.

37. The method of claim 14 wherein rules associated with said selected node are not limited to rules that always lead to achieving said preferred state.

38. A method of operating a hand-held computing device having a display, a processor, a keyboard and memory for teaching procedures for solving mathematical problems comprising the steps of:

providing a master group of mathematical operations performable by said processor;

organizing said master group of mathematical operations, said organizing comprising the steps of:

arranging said master group of mathematical operations according to a hierarchy of rules,

associating said master group of operations with a plurality of nodes, and associating selected ones of said plurality of nodes with another plurality of nodes, such that said plurality of nodes and said another plurality of nodes are indicative of levels of said hierarchy of said master group of mathematical operations, and

defining unique identifiers for each of said plurality of nodes and said another plurality of nodes, said unique identifiers corresponding to individual mathematical operations or sets of related mathematical operations of said master group of mathematical operations for solving mathematical problems;

storing a mathematical problem in memory;

displaying said mathematical problem on said display of said hand-held computing device;

determining a node from one of said another plurality of nodes associated with mathematical operations for solving said mathematical problem;

displaying selected ones of said unique identifiers representative of mathematical operations under said node, said mathematical operations being immediately operable on said selected mathematical problem and not limited to mathematical operations which always lead to a solution of said mathematical problem;

selecting one of said displayed unique identifiers;

applying a mathematical operation represented by said selected unique identifier to said mathematical problem; and

displaying the results of applying said mathematical operation to said mathematical problem.

39. The method of claim 38 and comprising the further steps of selecting the displayed results as the mathematical problem to be solved and then repeating the steps of "displaying said mathematical problem" through the steps of "displaying the results" until said stored mathematical problem has been solved.

40. The method of claim 38 wherein said unique identifiers for said plurality of nodes are selected so as to avoid designating contradicting mathematical operations that could result in infinite looping or infinite recursion.

41. The method of claim 38 wherein said steps of arranging, associating and defining further comprising avoiding duplication of mathematical operations, sets of mathematical operations, and node identifiers that are members of more than one group of mathematical operations.

42. The method of claim 38 wherein said hand-held computing device includes an input/output port and further comprises the steps of providing a connection between said hand-held computing device and another computing device and then exchanging data there between.

43. The method of claim 38 wherein step of organizing comprises the step of organizing said rules in a directed acyclic format or graph (DAG).

44. The method of claim 38 further comprising the step of generating an array or linked list of pointers to said plurality of nodes and said another plurality of nodes having said unique identifiers.

45. Further comprising generating a pointer to at least one of said pointers of said array of pointers.

46. The method of claim 38 further comprising, determining a group of nodes applicable to said mathematical problem and generating an array or linked list of said nodes applicable to said mathematical problem covering all mathematical operations directly or indirectly associated with a selected node, said array including the maximum number of mathematical operations associated with a single node while avoiding inclusion of mathematical operations that would result in infinite looping or infinite recursion.

47. The method of claim 38 further comprising the steps of:

selecting a top level node of said another plurality of nodes as a starting node;

determining the depth of each node of said plurality of nodes and said another plurality of nodes from said starting node to the lowest level nodes;

providing an indication of the depth of nodes included in said generated array; and

pruning rules from a node having the lowest depth level.

48. The method of claim 47 further comprising the step of:

generating a group or bucket of nodes from said array or linked list of nodes having a node with the highest common depth level to increase the speed of changing complex introduced subject matter.

49. The method of claim 39 further comprising the steps of:

avoiding revisiting fully changed portions of said stored mathematical problem; and

following said selecting step by applying a different set of mathematical operations.